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EXAMINER	
PHAM, THIERRY L	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/598,201	OKAMURA ET AL.	
	Examiner	Art Unit	
	Thierry L Pham	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE filed on 10/12/04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- This action is responsive to the following communication: RCE filed on 10/12/04.
- Claims 1-3, 5-54 are pending in this application; Claim 4 has been canceled; Claims 1-2, 6-7, 9-10, 13, 15-17, 21-22, 25, 28, 30-32, 37, 39-40, 43-54 have been amended.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 47-48, 50-51, 53-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not provide an adequate written description of the limitations as recited in claims 47-48, 50-51, 53-54, wherein "a second recording mode for referring to images of pixels surrounding a given pixel of the image input in said inputting step, decimating the image in a manner such that whether a given pixel is deleted is based on the surrounding pixels that have been referred to"; therefore, it does not enable one skilled in the art to make, use and/or practice the invention. Specifically, nowhere in the specification describing "a given pixel is deleted is based on the surrounding pixels" means/steps.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 5-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al (U.S. 6204867), and in view of Kakutani et al (U.S. 6356358).

Regarding claim 1, Fujimoto discloses an image processing apparatus (digital copier, fig. 3) comprising:

(1) input means (image data input portion 30, fig. 3) for inputting an image of one of a plurality of image types (color or monochrome image types, col. 4, lines 26-47);

(2) image processing means (image processing portion 31, fig. 3) for generating a recording image data based on the input image (based on input image data, fig. 3), the image processing means being capable of generating first recording image data (i.e. color image data, fig. 5) for recording the image on a recording material at a predetermined recording density (color input mage data is recording at first recording speed, fig. 18), and a second recording image data (i.e. monochrome input image data, fig. 5) for recording the image on a recording medium at a recording density lower than that of the first recording image data (monochrome input image data is recording at second speed, fig. 18, wherein second speed is greater than first recording speed, col. 7, lines 20-27 and it is known in the art lower recording speed provides high density output image data than higher recording speed);

(3) selecting means (control panel including selecting means for selecting first or second recording modes, fig. 4, col. 4, lines 27-34 and col. 16, lines) for use of the operator in selecting a recording mode from among a first recording mode (first recording mode for recording color image data, col. 3, lines 15-24) for recording the first recording image (color image information density, col. 3, lines 15-24) and a second recording mode (second recording mode for recording monochrome, col. 3, lines 15-24) for recording the second recording image data;

(4) determining means (image processing portion 31 includes original discrimination 31h for determining whether an input image is color or monochrome, fig. 6, col. 2, lines 42-52) for determining if the input image is a predetermined image type; and

(5) control means (control processing unit 34 for controlling/changing recording modes, figs. 10-11, cols. 19-20) for changing to the first recording mode, when the second recording mode is selected by operator (recording mode is selected by operator, fig. 7) and said determining means

determines that the input image is the predetermined image type (CPU 34 determines which recording modes to be used based upon input image data, fig. 9) suitable for recording by the first recording mode.

Fujimoto discloses first and second recording modes for recording color and/or monochrome image data, but fails to explicitly disclose a recording mode by "reducing the number of recording dots".

Kakutani et al, in the same field of endeavor for image processing apparatus, teaches a recording mode by "reducing the number of recording dots" (recording table 206 comprising plurality of different recording modes with different recording resolutions (dots), fig. 6 and figs. 16-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Fujimoto as per teachings of Kakutani because of a following reason: (1) operational efficiency of the color image forming apparatus is improved (Fujimoto, col. 2, lines 1-5); (2) reduction of the life of the motors and/or problems of noise and wasted power consumption can be prevented and reduction of waiting time (Fujimoto, col. 8, lines 33-42); (3) to obtain high output quality image by using different recording modes/schemes (Kakutani, col. 3, lines 1-10).

Therefore, it would have been obvious to combine Fujimoto with Kakutani to obtain the invention as specified in claim 1.

Regarding claim 2, Fujimoto further discloses an image processing apparatus according to Claim 1, further comprising a recording means for recording the first recording image data or the second recording image data according to the mode being used (color or monochrome modes, fig. 7).

Regarding claim 3, Fujimoto further discloses an image processing apparatus according to Claim 1, wherein said input means inputs one-pixel binary image data (image with black pixel, Fig. 5, col. 12, lines 47-55).

Regarding claim 5, Fujimoto further discloses an image processing apparatus according

to claim 3, wherein said input means inputs one of a binary image data received from another communicat ion apparatus (i.e. external devices, col. 19, lines 60-67) and binary data obtained by binarizing multi-valued image data obtained by reading a subject copy.

Regarding claim 6, Fujimoto further discloses an image processing apparatus according to Claim 1, wherein the predetermined image type is a color image (Fig. 5), and said determining means determines whether the input image is a monochrome image or a color image (Fig. 5); and said control means changes (mode managing means, Fig. 5, col. 3, lines 15-32) to the first recording mode, when the second recording mode is selected by operator, and said determining means determines that the input image is a color image.

Regarding claim 7, Fujimoto further discloses an image processing apparatus according to Claim 1, wherein when the input image type is a monochrome image, and said determining means determines (separation/screen circuit, col. 14, lines 23-31) whether the monochrome image is a character image or a halftone image; and said control means changes (if it is not color image, switch to monochrome image mode, Fig. 6) to the first recording mode, when the second recording mode is selected by operator and said determining means determines that the monochrome image is a halftone image.

Regarding claim 8, Fujimoto further discloses an image processing apparatus according to Claim 1, wherein said input means inputs an image having a plurality of pages (image having a plurality of colors, Fig. 18); said determining means (Fig. 18) determines the image type of the input image in units of a page (i.e. page having yellow, magenta, and cyan colors, Fig. 18); and said control means controls the recording mode in units of a page (color mode, Fig. 18).

Regarding claims 16-23: Claims 16-23 are the methods corresponding the apparatus and recite limitations that are similar and in the same scope of invention as to those in claims 1-3, 5-8; therefore, claims 16-23 are rejected for the same rejection rationale/basis as described in claims 1-3, 5-8 above.

Regarding claims 31-38: Claims 31-38 recite limitations that are similar and in the same scope of invention as to those in claims 1-3,5-8 except computer readable memory for storing computer programs. All computers/printers have some type of computer readable medium (i.e. image memory, fig. 3, Fujimoto) for storing computer programs, hence claims 31-38 would be rejected using the same rationale as in claims 1-3, 5-8.

Regarding claims 15, 30, and 45 recite limitations that are similar and in the same scope of invention as to those in claims 1 above; therefore, claims 15, 30, and 45 are rejected for the same rejection rationale/basis as described in claim 1. The combinations of Fujimoto and Kakutani teaches plurality of recording modes for recording different input image data, please see claim 1 rejection for more details.

Regarding claim 9, Fujimoto discloses an image processing apparatus (digital copier, fig. 3) comprising:

(1) input means (image data input portion 30, fig. 3) for inputting an image of one of a plurality of image types (color or monochrome image types, col. 4, lines 26-47);

(2) image processing means (image processing portion 31, fig. 3) for generating a recording image data based on the input image (based on input image data, fig. 3), the image processing means being capable of generating first recording image data (i.e. color image data, fig. 5) for recording the image on a recording material at a predetermined recording density (color input mage data is recording at first recording speed, fig. 18), and a second recording image data (i.e. monochrome input image data, fig. 5) for recording the image on a recording medium at a recording density lower than that of the first recording image data (monochrome input image data is recording at second speed, fig. 18, wherein second speed is greater than first recording speed, col. 7, lines 20-27 and it is known in the art lower recording speed provides high density output image data than higher recording speed);

(3) selecting means (control panel including selecting means for selecting first or second recording modes, fig. 4, col. 4, lines 27-34 and col. 16, lines) for use of the operator in selecting

a recording mode from among a first recording mode (first recording mode for recording color image data, col. 3, lines 15-24) for recording the first recording image (color image information density, col. 3, lines 15-24) and a second recording mode (second recording mode for recording monochrome, col. 3, lines 15-24) for recording the second recording image data, and a third recording mode (different recording modes can be selected via control panel for recording different types of inputted image data, fig. 8-11) for recording the third recording image data on the recording material, the third image data being obtained from the input image data without decimating the image (forming/printing the inputted image data without having to decimate the image, fig. 3).

(4) determining means (image processing portion 31 includes original discrimination 31h for determing whether an input image is color or monochrome, fig. 6, col. 2, lines 42-52) for determining if the input image is a predetermined image type; and

(5) control means (control processing unit 34 for controlling/changing recording modes, figs. 10-11, cols. 19-20) for changing to the first recording mode, when the second recording mode is selected by operator (recording mode is selected by operator, fig. 7) and said determining means determines that the input image is the predetermined image type (CPU 34 determines which recording modes to be used based upon input image data, fig. 9) suitable for recording by the first recording mode.

Fujimoto discloses first and second recording modes for recording color and/or monochrome image data, but fails to explicitly disclose a recording mode by "reducing the number of recording dots".

Kakutani et al, in the same field of endeavor for image processing apparatus, teaches a recording mode by "reducing the number of recording dots" (recording table 206 comprising plurality of different recording modes with different recording resolutions (dots), fig. 6 and figs. 16-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Fujimoto as per teachings of Kakutani because of a following reason: (1) operational efficiency of the color image forming apparatus is improved (Fujimoto, col. 2, lines 1-5); (2) reduction of the life of the motors and/or problems of noise and wasted power consumption can be prevented and reduction of waiting time (Fujimoto, col. 8, lines 33-42); (3)

to obtain high output quality image by using different recording modes/schemes (Kakutani, col. 3, lines 1-10).

Therefore, it would have been obvious to combine Fujimoto with Kakutani to obtain the invention as specified in claim 9.

Regarding claim 10, Fujimoto further teaches an image processing apparatus according to claim 9, further comprising a recording means (i.e. mode manager 37, fig. 2a) for recording in first, second, or third recording mode.

Regarding claim 11, Fujimoto further teaches an image processing apparatus according to claim 9, wherein said input means inputs one-pixel binary image data (image with black pixel, Fig. 5, col. 12, lines 47-55).

Regarding claim 12, Fujimoto further teaches an image processing apparatus according to claim 11, wherein said input means inputs one of binary data received from another communication apparatus (external devices, col. 19, lines 60-67) and binary data by binarizing multi-valued image data obtained by reading a subject copy.

Regarding claim 13, Fujimoto further discloses an image processing apparatus according to Claim 9, wherein the predetermined image type is a color image (Fig. 5), and said determining means determines whether the input image is one of a monochrome image and a color image (Fig. 5); and said control means changes (mode managing means, Fig. 5, col. 3, lines 15-32) to the third recording mode, when the first and second recording mode is selected by said selecting means, and said determining means determines that the input image is a color image.

Regarding claim 14, Fujimoto further discloses an image processing apparatus according to Claim 9, wherein said input means inputs an image having a plurality of pages (image having a plurality of colors, Fig. 18); said determining means (Fig. 18) determines the image type of the input image in units of a page (i.e. page having yellow, magenta, and cyan colors, Fig. 18); and said control means controls the recording mode in units of a page (color mode, Fig. 18).

Regarding claims 24-29: Claims 24-29 are the methods corresponding the apparatus and recite limitations that are similar and in the same scope of invention as to those in claims 9-14; therefore, claims 24-29 are rejected for the same rejection rationale/basis as described in claims 9-14 above.

Regarding claims 39-44: Claims 39-44 recite limitations that are similar and in the same scope of invention as to those in claims 9-14 except computer readable memory for storing computer programs. All computers/printers have some type of computer readable medium (i.e. image memory, fig. 3, Fujimoto) for storing computer programs, hence claims 39-44 would be rejected using the same rationale as in claims 9-14.

5. Claims 46, 49, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al (U.S. 6204867), and in view of Kawai (JP 10-097161, translation is provided).

Regarding claims 46, 49, and 52, Fujimoto discloses an image processing apparatus (digital copier, fig. 3) comprising:
(1) input means (image data input portion 30, fig. 3) for inputting an image of one of a plurality of image types (color or monochrome image types, col. 4, lines 26-47);
(2) image processing means (image processing portion 31, fig. 3) for generating a recording image data based on the input image (based on input image data, fig. 3), the image processing means being capable of generating first recording image data (i.e. color image data, fig. 5) for recording the image on a recording material at a predetermined recording density (color input mage data is recording at first recording speed, fig. 18), and a second recording image data (i.e. monochrome input image data, fig. 5) for recording the image on a recording medium at a recording density lower than that of the first recording image data (monochrome input image data is recording at second speed, fig. 18, wherein second speed is greater than first recording speed, col. 7, lines 20-27 and it is known in the art lower recording speed provides high density output image data than higher recording speed);
(3) selecting means (control panel including selecting means for selecting first or second

recording modes, fig. 4, col. 4, lines 27-34 and col. 16, lines) for use of the operator in selecting a recording mode from among a first recording mode (first recording mode for recording color image data, col. 3, lines 15-24) for recording the first recording image (color image information density, col. 3, lines 15-24) and a second recording mode (second recording mode for recording monochrome, col. 3, lines 15-24) for recording the second recording image data;

(4) determining means (image processing portion 31 includes original discrimination 31h for determining whether an input image is color or monochrome, fig. 6, col. 2, lines 42-52) for determining if the input image is a predetermined image type; and

(5) control means (control processing unit 34 for controlling/changing recording modes, figs. 10-11, cols. 19-20) for changing to the first recording mode, when the second recording mode is selected by operator (recording mode is selected by operator, fig. 7) and said determining means determines that the input image is the predetermined image type (CPU 34 determines which recording modes to be used based upon input image data, fig. 9) suitable for recording by the first recording mode.

Fujimoto discloses first and second recording modes for recording color and/or monochrome image data, but fails to explicitly disclose a second recording mode is a decimation mode by reducing the number of recording dots.

Kawai, in the same field of endeavor for image processing apparatus, teaches a recording mode by reducing the number of recording dots (printer with decimation mode for thinning out black pixels, abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Fujimoto as per teachings of Kawai because of a following reason: (1) operational efficiency of the color image forming apparatus is improved (Fujimoto, col. 2, lines 1-5); (2) reduction of the life of the motors and/or problems of noise and wasted power consumption can be prevented and reduction of waiting time (Fujimoto, col. 8, lines 33-42); (3) to conserve/reduce toner usage (abstract, Kawai).

Therefore, it would have been obvious to combine Fujimoto with Kawai to obtain the invention as specified in claims 46, 49, 52.

6. Claims 47-48, 50-51, 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al (U.S. 6204867), and in view of Ono (JP 08130637, translation provided).

Regarding claims 47-48, 50-51, and 53-54, Fujimoto discloses an image processing apparatus (digital copier, fig. 3) comprising:

(1) input means (image data input portion 30, fig. 3) for inputting an image of one of a plurality of image types (color or monochrome image types, col. 4, lines 26-47);

(2) selecting means (control panel including selecting means for selecting plurality of recording modes, fig. 4, col. 4, lines 27-34 and col. 16, lines) and a third recording mode (different recording modes can be selected via control panel for recording different types of inputted image data, fig. 8-11) for recording the third recording image data on the recording material, the third image data being obtained from the input image data without decimating the image (forming/printing the inputted image data without having to decimate the image, fig. 3).

(3) determining means (image processing portion 31 includes original discrimination 31h for determining whether an input image is color or monochrome, fig. 6, col. 2, lines 42-52) for determining if the input image is a predetermined image type; and

(4) control means (control processing unit 34 for controlling/changing recording modes, figs. 10-11, cols. 19-20) for changing to the third recording mode, when one of the first and the second recording mode is selected (recording mode is selected by operator, fig. 7) and said determining means determines that the input image is a color image (CPU 34 determines which recording modes to be used based upon input image data, fig. 9).

However, Fujimoto fails to explicitly disclose a recording mode for unconditionally decimating the image input, and a second recording mode for referring to images of pixels surrounding a given pixel of the image input by said input means, decimating the image in a manner such that whether a pixel is decimated is based on the surrounding pixels that have been referred.

Ono, in the same field of endeavor for printing, teaches a recording mode for unconditionally decimating the image input, and a second recording mode for referring to images of pixels surrounding (unconditional decimation mode for converting black pixels into white pixels, abstract and page 2 of translation) a given pixel of the image input by said input means,

decimating the image in a manner such that whether a pixel is decimated is based on the surrounding pixels that have been referred.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Fujimoto as per teachings of Ono because of a following reason: (1) operational efficiency of the color image forming apparatus is improved (Fujimoto, col. 2, lines 1-5); (2) reduction of the life of the motors and/or problems of noise and wasted power consumption can be prevented and reduction of waiting time (Fujimoto, col. 8, lines 33-42); (3) the amount of ink and the power can be saved (Ono, abstract).

Therefore, it would have been obvious to combine Fujimoto with applicant's admitted prior art to obtain the invention as specified in claims 47-48, 50-51, 53-54.

Response to Arguments

Applicant's arguments filed 10/12/04 have been fully considered but they are not persuasive.

- Regarding claim 1, the applicants argued the cited prior art (Fujimoto) does not teach image processing means for generating plurality of different recording image data.

In response, Fujimoto explicitly teaches an image forming apparatus for generating both color and monochrome image data.

- Regarding claim 1, the applicants argued the cited prior art (Fujimoto) does not teach a control means for changing recording modes.

In response, Fujimoto explicitly teaches a CPU 34 for determining and changing between color and monochrome recording modes. In addition, operator can also use a control panel as shown in fig. 4 to change between recording modes.

- Regarding claim 47, the applicants argued the prior art does not teach "unconditional" decimation mode and which decimation is performed in a manner that depends on the pixels surrounding a given pixel and to determine whether a given pixel is to be deleted.

In response, "unconditional" decimation mode was not previously cited in claim 47. In addition, "decimation performed in a manner that depends on the pixels surrounding a given pixel and to

determine whether a given pixel is to be deleted" raises new matters that are not supported by specification; please refer to 112, first paragraph rejection above for more details.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L Pham whose telephone number is (703) 305-1897. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on (703)308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham

GABRIEL GARCIA
PRIMARY EXAMINER